

submitted as a full and complete response thereto. A substitute abstract has been submitted to replace the originally filed abstract. Claims 1-7 are respectfully submitted for consideration.

Claims 1-4 and 7 were rejected under 35 USC §103(a) as being unpatentable over Ruf (U.S. Patent No. 5,850,048) in view of Yamada et al. (U.S. Patent No. 5,614,687).

Claims 5 and 6 were rejected under 35 USC §103(a) as being unpatentable over Ruf and Yamada further in view of Rothbart (U.S. Patent No. 4,733,593).

Ruf was cited in the Office Action for disclosing all of the claimed elements of the present invention including means capable of automatically detecting a BPM or a beat period of an audio signal and changing the tempo of the audio signal in accordance with the changed BPM. The Office Action admitted that Ruf did not disclose an input audio signal. Yamada was cited in the Office Action for disclosing an audio input means for inputting an audio signal. Rothbart was cited in the Office Action for providing a means for mixing signals to produce a new signal.

Applicants respectfully traverse these rejections and submit that each of claims 1-7, as submitted herein, recites subject matter which is neither disclosed nor suggested in the cited prior art. Namely a combination of cited prior art does not disclose or suggest changing the BPM of an input audio signal to vary the tempo, as recited in claims 1 and 7 of the present invention.

Claim 1, upon which claims 2-6 depend, recites an audio signal processing apparatus capable of changing the tempo of an input audio signal. The apparatus comprises a magnification designating means capable of designating a plurality of different

magnifications. A means is capable of automatically detecting beats per minute of the input audio signal or a beat period of the input audio signal. The means also changes the beats per minute or the beat period in accordance with a magnification designated by the magnification designating means. The means also changes the tempo of the input audio signal in accordance with the changed beats per minute or the changed beat period.

Independent claim 7 recites an audio signal processing apparatus which changes the tempo of an input audio signal. The apparatus comprises a magnification designating device which designates a plurality of different magnifications. A device automatically detects beats per minute of the input audio signal or a beat period of the input audio signal. The device changes the beats per minute or the beat period in accordance with a magnification designated by the magnification designating device. The device also changes the tempo of the input audio signal in accordance with the changed beats per minute or the changed beat period

The present invention provides an improved audio signal processing apparatus capable of automatically changing the tempo of a musical sound. Thus, the apparatus of the present invention ensures an improved operation efficiency of an audio signal processing apparatus. Applicants respectfully submit that a combination of the cited prior art references does not disclose all of the novel elements of the claimed apparatus and the realized results.

Ruf discloses an electronic metronome for setting a musical tempo for instructing a music student, at column 3, lines 7-10. A metronome is an instrument used for marking time and is ordinarily used with musical timekeeping. The metronome in Ruf is an

instrument which allows a human operator to mark rhythm in accordance with a tempo inputted by depressing a key. In Ruf, the operator depresses a key which changes the BPM and the screen indicating the time signature. Thus, the BPM are manually changed in accordance with signature changes in the song the student is playing and not automatically detected and changed, as claimed in the present invention. Therefore, applicants respectfully submit that Ruf does not disclose a means capable of automatically detecting BPM of an audio signal, as recited in claims 1 and 7 of the present invention. Additionally, Ruf does not include an audio signal input, as admitted in the Office Action. Thus, applicants respectfully submit that Ruf is incapable of changing the tempo of an input audio signal since no audio signal input exists. Since no audio input exists, Ruf cannot automatically detect BPM. It is therefore respectfully submitted that the metronome of Ruff cannot change automatically detected BPM or change the tempo of the input audio signal. Further, applicants respectfully submit that no motivation for including an input audio signal in the metronome of Ruf, nor changing the tempo of an input audio signal exists in Ruf.

Yamada discloses an apparatus for detecting the number of beats per unit time in a tune. In Yamada, a second time measuring means starts to measure a time point when the level of a predetermined frequency component of an input audio signal is higher than a threshold level. After a predetermined time period elapses from the time point, the measurement of time by the second time measuring means is terminated at a time point when the level of the predetermined frequency component of the input audio signal is again higher than a threshold level. Thus, Yamada merely discloses an apparatus for detecting the number of beats in a tune. Applicants respectfully submit that Yamada does

not teach or suggest changing the BPM of an input audio signal to vary the tempo of an input audio signal. Thus, Yamada is deficient in its teachings for at least the same reasons as Ruf. Thus, a proper combination of Ruf and Yamada would not teach or suggest all of the elements of independent claims 1 and 7.

Rothbart is directed to a metronome in which the type, pattern and frequency of beats are determined by data stored in a memory manually programmable by means of a keyboard. As previously mentioned in the response filed on February 10, 2000, there is no audio signal input into the device of Rothbart. Thus, Rothbart, like Ruf and Yamada, fails to teach or suggest means capable of automatically detecting BPM of an input audio signal or a beat period of the input audio signal, changing the BPM or the beat period in accordance with the magnification designated by magnification designating means nor changing the tempo of the audio signal in accordance with the changed BPM and the changed beat period.

In Ruf there is no disclosure or suggestion with respect to changing the BPM of an input audio signal to vary the tempo of an input audio signal, as claimed in independent claims 1 and 7. And, as explained above, neither Yamada nor Rothbart disclose or suggest this feature. Therefore, Yamada and Rothbart cannot be relied upon to cure the deficiencies of Ruf. Thus, no proper combination of the cited prior art references discloses or suggests all of the claimed elements of the present invention.

Moreover, the applicants respectfully submit that no suggestion or motivation exists in any of the cited prior art for combining it in the manner as set forth in the Office Action. In order for a section 103 rejection to be proper, MPEP §706.02(j) requires the Patent

Office to establish a prima facie case of obviousness using three basic criteria which include: a suggestion or motivation to modify the references or combine the teachings; a reasonable expectation of success; and the references must teach or suggest all of the claim limitations. Applicants respectfully submit that none of the cited prior art include any motivation for combining it to teach the present invention. In Re Anita Dembiczak and Benson Zinbarg, 175 F.3d 994 (Fed. Cir. 1999), the Federal Circuit stated that "combining prior art references without evidence of such a suggestion, teaching or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability - the essence of hindsight." Thus, the applicants respectfully submit that no motivation exists in the cited prior art or in the prior art in general for combining the prior references to teach the instant invention. Additionally, MPEP §2143.01 states that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention, then the teachings of the references are not sufficient to render the claims prima facie obvious. Both Ruf and Rothbart are metronomes used for setting a musical tempo for instructing a music student. The proposed modification of these references would destroy or change the principle of operation of these references. This is because metronomes emit or output a musical tempo and are not for receiving an audio input.

Applicants respectfully submit that a combination of the cited prior art does not teach or suggest all of the claimed elements of the present invention and cannot therefore be properly used to reject the claims of the present invention under section 103. Applicants request that all of claims 1-7 be found allowable, and this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 1-2300.

Respectfully submitted,

ARENT FOX KINTNER PLOTKIN KAHN PLLC

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Bradley D. Goldizen  
Attorney for Applicants  
Reg. No. 43,637

Atty. Docket No. 107156-9038

1050 Connecticut Avenue, N.W.  
Suite 600  
Washington, D.C. 20036-5339  
Tel (202) 857-6000  
Fax (202) 638-4810

BDG:abm

Encl: Petition for Extension of Time

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